



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,441	07/25/2003	Chien-Min Sung	20303.CIP	3422

20551 7590 12/27/2005

THORPE NORTH & WESTERN, LLP.
8180 SOUTH 700 EAST, SUITE 200
SANDY, UT 84070

EXAMINER

MARCHESCHI, MICHAEL A

ART UNIT	PAPER NUMBER
----------	--------------

1755

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/627,441

Applicant(s)

SUNG, CHIEN-MIN

Examiner

Michael A. Marcheschi

Art Unit

1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) 1-26 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 27-35 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/30/03, 9/7/04</u> . | 6) <input type="checkbox"/> Other: ____ |

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-26, drawn to a superabrasive tool, classified in class 51, subclass 307.
- II. Claims 27-35, drawn to a method of making, classified in class 51, subclass 293.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, (1) the process as claimed can be used to make other and materially different product, such as, one that does not rely on a superabrasive and (2) that the product as claimed can be made by another and materially different process, such as, a process that relies on a bonding mechanism other than metallurgically bonding.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

During a telephone conversation with David Osborne on 10/28/05 a provisional election was made without traverse to prosecute the invention of Group II, claims 27-35. Affirmation of this election must be made by applicant in replying to this Office action. Claims 1-26 are

Art Unit: 1755

withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

The disclosure is objected to because of the following informalities:

The continuing data is not updated (patent number of parent not defined).

On page 16, lines 21-22, applicant refers to a copending case but fails to define the serial number.

Appropriate correction is required.

Claims 27-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 27-35 are indefinite as to the limitation “solidified molten braze alloy” because the terms “solidified” and “molten” contradict one another. Is the braze “molten” or “solidified”?

Claim 33 is also indefinite as to the limitation “substantially in accordance with a predetermined pattern” because the examiner is unclear as to what “substantially” encompasses, thus rendering the scope of the claim unclear.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

Art Unit: 1755

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

A metallurgical bond is defined in the specification on page 6, lines 22-26 and a braze alloy is defined on page 6, line 33-page 7, line 3 and page 6, lines 9-16 (reactive element) and thus the claims are interpreted in light of the definitions.

Claims 27, 28, 31 and 32 are rejected under 35 U.S.C. 102(b) as anticipated by, or in the alternative, under 35 U.S.C. 103(a) as obvious over EP 570635.

The reference teaches in the abstract, column 4, line 48-column 6, line 54, Column 7, lines 26-40 and the claims, a method of making an abrasive tool which comprises coating a superabrasive with an active coating material (any metal alloy-specific metal alloys defined are braze alloys), thus forming a chemical bond, and bonding (by sintering) the coated particles together by the sinterable outer coating of the active coating material. In the alternative, these coated particles can be can be mixed with an alloy and sintered to provide an abrasive compact. The abrasive compact can be any form or shape. The compact can be brazed onto a cutting surface (i.e. this is defines a substrate)

Claims 27 and 28 are anticipated by the reference because the reference teaches a process which involves all of the claimed steps. It is the examiners position that bonding (by sintering) of the coated particles together by the sinterable outer coating of the active coating material or by sintering the coated particles in the presence of an alloy, as defined by the reference, reads on metallurgically bonding the particles together in view of applicants definition. In the alternative, no patentable distinction is seen to exist between the reference and the claimed invention absent evidence to the contrary because it is the examiners position that bonding (by sintering) of the coated particles together by the sinterable outer coating of the active coating material or by sintering the coated particles in the presence of an alloy, as defined by the reference, encompasses and make obvious metallurgically bonding the particles together because the bonding of metals together by sintering broadly can encompasses metallurgically bonding.

Claims 31 and 32 are anticipated by the reference because the reference teaches a method for making a tool which comprises brazing and brazing is metallurgically bonding. In the alternative, no patentable distinction is seen to exist between the reference and the claimed invention absent evidence to the contrary because it is the examiners position that brazing encompasses and makes obvious metallurgically bonding the particles to a support because bonding of metals together by brazing can encompasses metallurgically bonding.

Claims 29 and 34 are rejected under 35 U.S.C. 103(a) as obvious over EP 570635.

The limitation of claim 29 is obvious because the performance of two steps simultaneously, which have previously been performed in sequence was held to have been obvious. *In re Tatincloux* 108 USPQ 125 (CCPA 1955).

With respect to claim 34, it is the examiners position that the cutting surface and the bonded coated particles are in layer form, especially since applicant does not define what is meant by this.

Claims 30 and 33 are rejected under 35 U.S.C. 103(a) as obvious over EP 570635 in view of Sung et al. (568).

Sung et al., teaches in column 7, lines 10-16 that it is known to arrange particles in a predetermined manner in order to optimize the abrasive characteristics.

The limitation of claims 30 and 33 are obvious because the primary reference states that the abrasive compact can be any form or shape, thus any form or shape suggests that the individual abrasive can be positioned in any manner, including a predetermined manner. In the alternative, one skilled in the art would have appreciated the desirability of using a predetermined pattern of abrasive particles depending on the abrasive qualities sought. This concept and the benefits obtained using a predetermined pattern are is clearly shown by the secondary reference.

Claims 27-33 are rejected under 35 U.S.C. 102(b) as anticipated by, or in the alternative, under 35 U.S.C. 103(a) as obvious over Sung et al. (276).

The reference teaches in the abstract, column 6, line 13-column 7, line 15, column 9, lines 14-35, column 10, line 67-column 14, line 14, column 23, lines 35-34 and the claims, a method of making an abrasive tool which comprises coating a diamond (superabrasive) with an alloy coating material (specific groups defined-see claim 13-specific metal alloys defined are

Art Unit: 1755

brazing alloys), thus forming a chemical bond between the metallic coating and diamond, and bonding (sintering) the coated particles in contact with a matrix carrier (i.e. reads on bonding the particles together because the matrix material serves to bond the particles together). The bonding (sintering) step is defined as metallurgically bonding. In addition, it is implied that the matrix carrier is metallurgically bonded to a matrix body. The particles can be placed in a predetermined manner. Finally, the coating and sintering can be done simultaneously or in separate steps (see column 6, lines 50-57)

Claims 27-30 are anticipated by the reference because the reference teaches a process which involves all of the claimed steps. The teaching that the coated particles in contact with the matrix material are bonded reads on bonding the particles together because the matrix material serves to bond the particles together. The reference clearly defines that the bond of the coated particles and the matrix is a metallurgical bond (i.e. reads on metallurgically bonding). In the alternative, no patentable distinction is seen to exist between the reference and the claimed invention absent evidence to the contrary because the bonding appears to would be the same.

Claims 31-33 are anticipated by the reference because the reference teaches that the matrix carrier can be metallurgically bonded to a matrix body. In the alternative, no patentable distinction is seen to exist between the reference and the claimed invention absent evidence to the contrary because the bonding appears to would be the same.

Claim 34 is rejected under 35 U.S.C. 103(a) as obvious over Sung et al. (276).

Art Unit: 1755

With respect to claim 34, it is the examiners position that the cutting surface and the bonded coated particles are in layer form, especially since applicant does not define what is meant by this.

Claim 35 is rejected under 35 U.S.C. 103(a) as obvious over Sung et al. (276), as applied to claim 34 above and further in view of Sung et al. (641).

With respect to claim 35, the bonding of multiple layers, according to the primary reference, together is well within the scope of the skilled artisan because Sung et al. (641) teaches in column 9, lines 1-14 the desirability of bonding multiple layers together, thus optimizing the abrasive performance of the tool. One skilled in the art would have appreciated, from the teachings of the secondary reference, the benefits of bonding a plurality of layers together, thus said benefits providing the necessary motivation. The secondary reference states that the layers are bonded together by brazing (column 15, lines 27-32) and brazing is metallurgically bonding (bonding of metals together (support material of the references is a metal) by brazing encompasses metallurgically bonding).

In view of the teachings as set forth above, it is the examiners position that the references reasonably teach or suggest the limitations of the rejected claims.

A reference is good not only for what it teaches but also for what one of ordinary skill might reasonably infer from the teachings. *In re Opprecht* 12 USPQ 2d 1235, 1236 (CAFC 1989); *In re Bode* USPQ 12; *In re Lamberti* 192 USPQ 278; *In re Bozek* 163 USPQ 545, 549 (CCPA 1969); *In re Van Mater* 144 USPQ 421; *In re Jacoby* 135 USPQ 317; *In re*

Art Unit: 1755

***LeGrice* 133 USPQ 365; *In re Preda* 159 USPQ 342 (CCPA 1968). In addition, "A reference can be used for all it realistically teaches and is not limited to the disclosure in its preferred embodiments" See *In re Van Marter*, 144 USPQ 421.**

The references cited on the 1449 have been reviewed by the examiner and are considered to be art of interest since they are cumulative to or less than the art relied upon in the above rejections.

Applicant is reminded of the duty to disclose information, especially any related applications

Any foreign language documents submitted by applicant has been considered to the extent of the short explanation of significance, English abstract or English equivalent, if appropriate.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael A. Marcheschi whose telephone number is (571) 272-1374. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571) 272-1233. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MM
12/05

Michael A Marcheschi
Primary Examiner
Art Unit 1755